

seems to rest upon the presence or absence of a septum. As this generic character may be present or absent in some of the shells found in the same place, an interrogation naturally arises as to the value to be placed upon the septum in separating approximate forms into two different subfamilies, the *Mytilinæ* and *Dreissensinæ*.

NOTE ON SEPTIFER BIFURCATUS CONRAD.

BY H. A. PILSBRY AND W. J. RAYMOND.¹

Among the shells brought home by Thomas Nuttall from his journey to the Pacific coast and the Hawaiian Islands, were specimens of a mussel which Conrad named *Mytilus bifurcatus*.² Two specimens of this species were presented by Nuttall to the Academy of Natural Sciences,³ where they are still preserved.

Conrad gave the locality "Sandwich Is." for his species; but the specimens were probably from California. In the *Conchologia Iconica*, vol. 10, *Mytilus*, pl. 9, fig. 41 (1851), Reeve figures and describes a specimen from Cuning's collection as *Mytilus bifurcatus* Conrad, giving no locality. I do not know that the interior of this shell has been examined; but Nuttall's shells in the Academy collection prove to belong to the genus *Septifer*, having a well-developed septum or little deck across the apices of the valve cavities. There is no especial reason for believing Reeve's specimen to be a true *Mytilus*; but if they should be, the name *M. bifurcatus* Reeve cannot be retained, on account of the conflict with Conrad's prior *M. bifurcatus*.

As Mrs. Williamson's article (above) shows, Californian conchologists find two species excessively similar externally upon the Cali-

¹ In placing Mr. Raymond's name with my own, it should be mentioned that he is directly responsible only for the passages placed in quotation marks; though indirectly for the positions taken in the remainder of the article.—*H. A. P.*

² Journal of the Academy of Natural Sciences of Philadelphia, VII, 1834, p. 241, pl. 18, fig. 14.

³ Neither of these shells seems to be the original of Conrad's figure, and probably that particular shell has been smashed and discarded, the specimens having been glued to a card and consequently exposed to such accidents. A nearly complete series of Nuttall's shells is in the Academy Collection, including some not described by Conrad.

fornian coast, one a true *Mytilus*, the other a *Septifer*. As long ago as 1882, Dr. R. E. C. Stearns⁴ noticed this fact. It would seem, therefore, that the shell called *Mytilus bifurcatus* by West Coast conchologists requires another name. I have not seen *Mytilus multiformis* Carpenter,⁵ but from the description and measurements of that species I would consider it a distinct polymorphic species or a composite of two species. In the latter case the smooth form may retain Carpenter's name. At all events, nothing like the variability in sculpture or degree of inflation, which Carpenter says characterize his species, are found in the Californian *Mytilus* under consideration, which is invariably corrugated and never green in color. I would, therefore, in conjunction, with Mr. Raymond, propose that our form "be called *Mytilus Stearnsi*, since Dr. Stearns was the first to definitely show that a true *Mytilus* of this type is found on our coast." "Usually the two species can be separated by external characters. In the *Mytilus* the umbonal (diagonal) ridge is strongly developed, the valves of the adult shell are very deep, and the ventral margin is generally incurved. Inside, besides the absence of the septum, there are several denticles at the angle of the hinge line, which are rather stronger than the corresponding crenulations of *Septifer bifurcatus*; *Mytilus* is also lighter colored ventrally.

"I have no doubt Nuttall's shells came from this State, for from Santa Barbara southward it is an extremely abundant species, covering the rocks in places. The *Mytilus* is smaller and might easily be passed over as the young of *Septifer*. I have many *Septifers* from Santa Barbara, but no *Mytilus* among them. I have *Septifers* from San Diego collected by Crawford, and among these I found the few *Mytilus* mentioned by Mrs. Williamson." *Septifer bifurcatus* was collected by Henry Hemphill at San Hippolite Point, Lower California, and *Mytilus Stearnsi* he found at the same locality and also at San Ignacio Lagoon on the peninsula.

The type of *Mytilus Stearnsi* Pils. & Raym. (plate 4, figs. 1, 2, 3), is a San Diego specimen. So far as the series before me shows, *M. Stearnsi* does not grow so large as *S. bifurcatus*, a length of 25 mm., or one inch being a good size, while *bifurcatus* may measure nearly double that. An "unusually large" specimen of Carpenter's

⁴ Proc. Acad. Nat. Sci. Phila., 1882, p. 241. See also Dall and Orcutt, Proc. U. S. Nat. Mus., 1885, p. 551, and Keep, West Coast Shells, pp. 171, 173. In the latter work Conrad's name is misapplied.

⁵ Mazatlan Catalogue, p. 118.

M. multiformis measured: length 0.45, width 0.24, diam. 0.32 inch. This would be very small for *M. Stearnsi*. As to color, our species seems to be invariably brownish-purple above, with the ventral face straw colored, white beneath the cuticle. None of the specimens I have seen could be called green. Carpenter describes *M. multiformis* as "*purpureo, ad marginum ventralem viridi,*" with a variation "*omnino viridi.*"

Regarding the question raised by Mrs. Williamson, it may be said that all the main genera of *Mytilidæ* have both corrugated and smooth species, and experience has shown that the characters upon which the genera are founded, such as the presence of a septum, the position of the beaks and sculpture of the hinge line, are largely independent of the surface sculpture, the latter being a comparatively trivial character. At the same time, it is remarkable that two species of different genera, and so similar in external characters, should be found living together. It is probably a case of convergence of specific characters through the influence of identical external conditions.

NOTES AND NEWS.

The death of Mons. J. C. HIPPOLITE CROSSE, on the 7th of August, removes one more prominent French conchologist from the ranks. For many years editor of the *Journal de Conchyliologie*, Crosse had become known to malacologists the world over as one of most able and industrious workers on mollusca; and by many conchologists to whom he was personally known and esteemed, his loss will be felt with deep regret. A biographical notice will follow later.

VALLONIA ON THE PACIFIC SLOPE.—In THE NAUTILUS for September, in a note on "Shells of Redding, Shasta Co., California," *Vallonia pulchella* Müll., is quoted as "not before reported from California." In my collection I have this species from Oakland, Cal., collected by Mr. Fred L. Button of that city, and in Dr. J. G. Cooper's Catalogue of West North American Shells, he quotes this species as "circumboreal" and found as far south as "Mono County, California." In "Subalpine Mollusca of the Sierra Nevada," by W. J. Raymond, he reports finding *V. pulchella* var.